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Introduction to Integration Testing

Integration Testing: Ensuring Components Work Together Seamlessly

DEFINITION

> Integration testing is the process of testing combined parts of an application to verify they work together correctly. It focuses on the interfaces and interactions between integrated components.

KEY CONCEPTS

Top-Down Testing

This approach tests the high-level modules first and progressively integrates lower-level modules.

Bottom-Up Testing

In this method, lower-level modules are tested first, and higher-level modules are integrated gradually.

Sandwich Testing

A combination of top-down and bottom-up testing, addressing both high and low-level modules simultaneously.

Interface Testing

This focuses on verifying the communication and data exchange between integrated components.

Regression Testing

Re-running previous tests to ensure that new changes haven't adversely affected existing functionality.

EXAMPLES

→ Testing a payment gateway with a shopping cart module.

→ Verifying data flow between a user authentication service and a database.

→ Checking the interaction between a web application and its API.

MEMORY TIPS

★ Remember 'T-BIS' for testing types: Top-down, Bottom-up, Interface, Sandwich.

★ Think of integration as 'joining pieces' of a puzzle.

★ Use the acronym 'RIT' for Regression, Integration, Testing.

COMMON MISTAKES

✗ Neglecting to test all interfaces between components.

✗ Assuming that unit tests cover integration issues.

✗ Not documenting integration test cases thoroughly.

QUICK RECAP

Integration testing is crucial for ensuring that different modules of an application work together effectively. It involves various strategies like top-down and bottom-up testing to identify interface issues early in the development process.